

D A T A B A S E S

WEEK 10

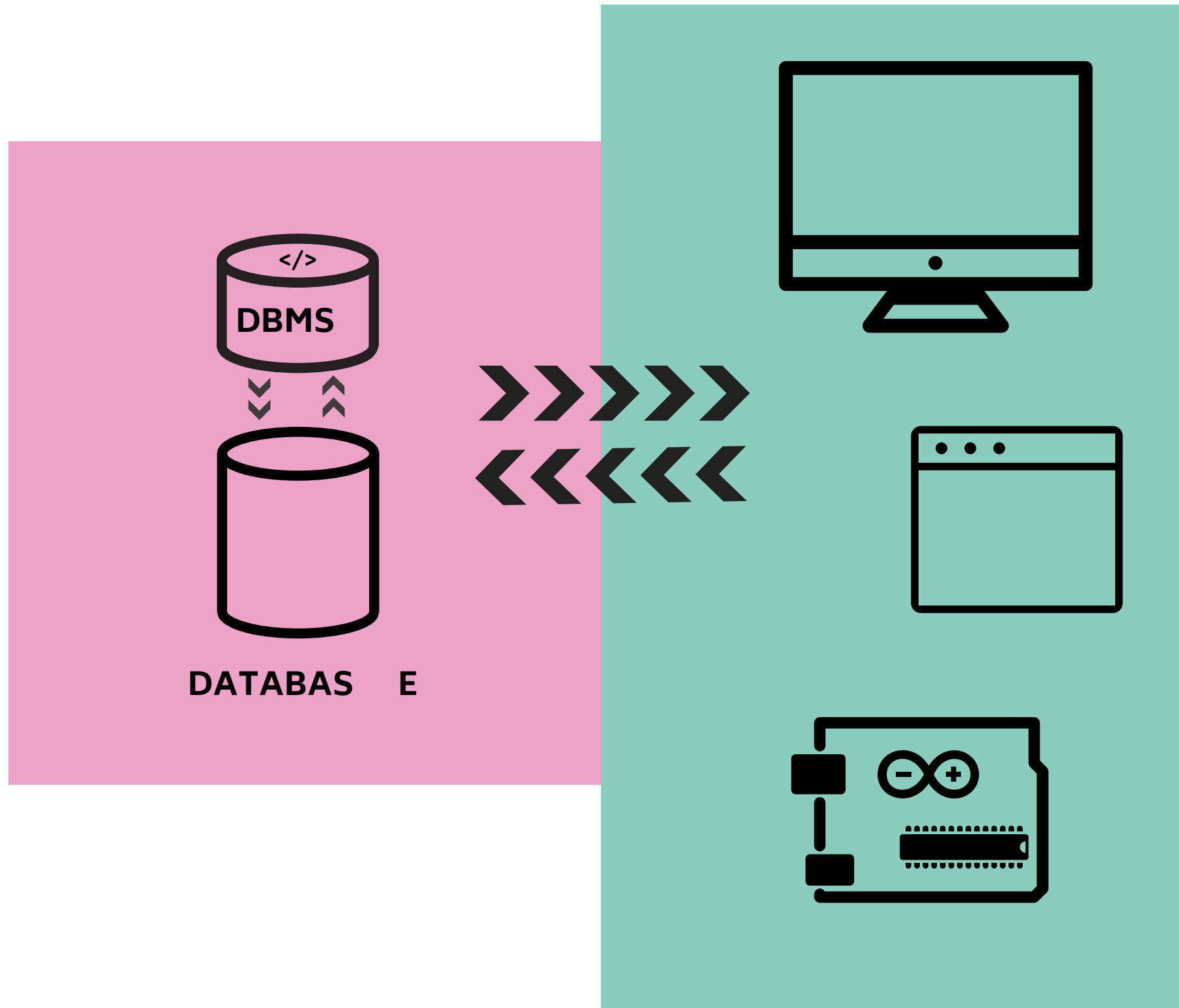
SYSTEM ARCHITECTURE

OVERVIEW

TWO TIER

DATA TIER

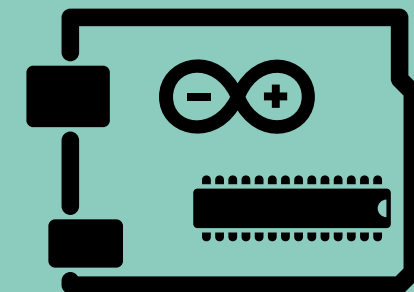
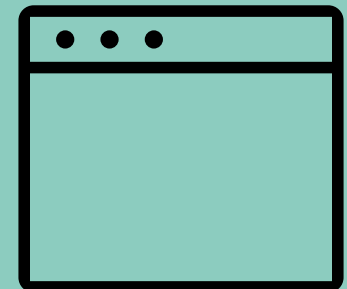
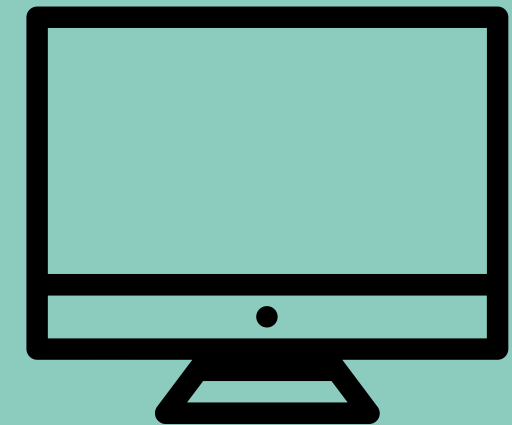
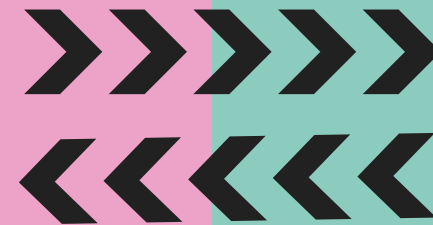
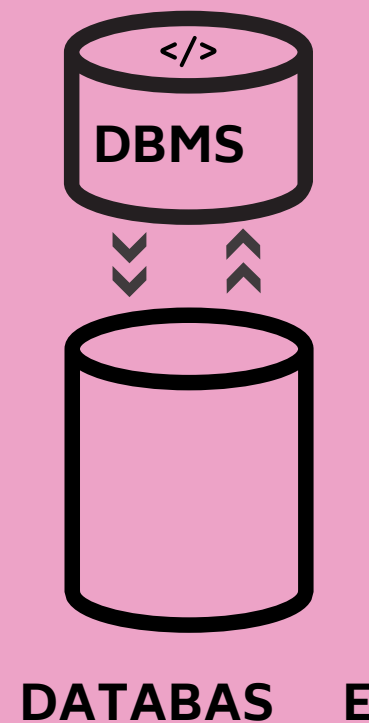
CLIENT TIER



DATA TIER

CLIENT TIER

CLIENT APPLICATION
DIRECTLY
COMMUNICATES
WITH THE DATABASE,
THROUGH SENDING
REQUESTS
DIRECTLY TO THE
DATABASE
MANAGEMENT SYSTEM.

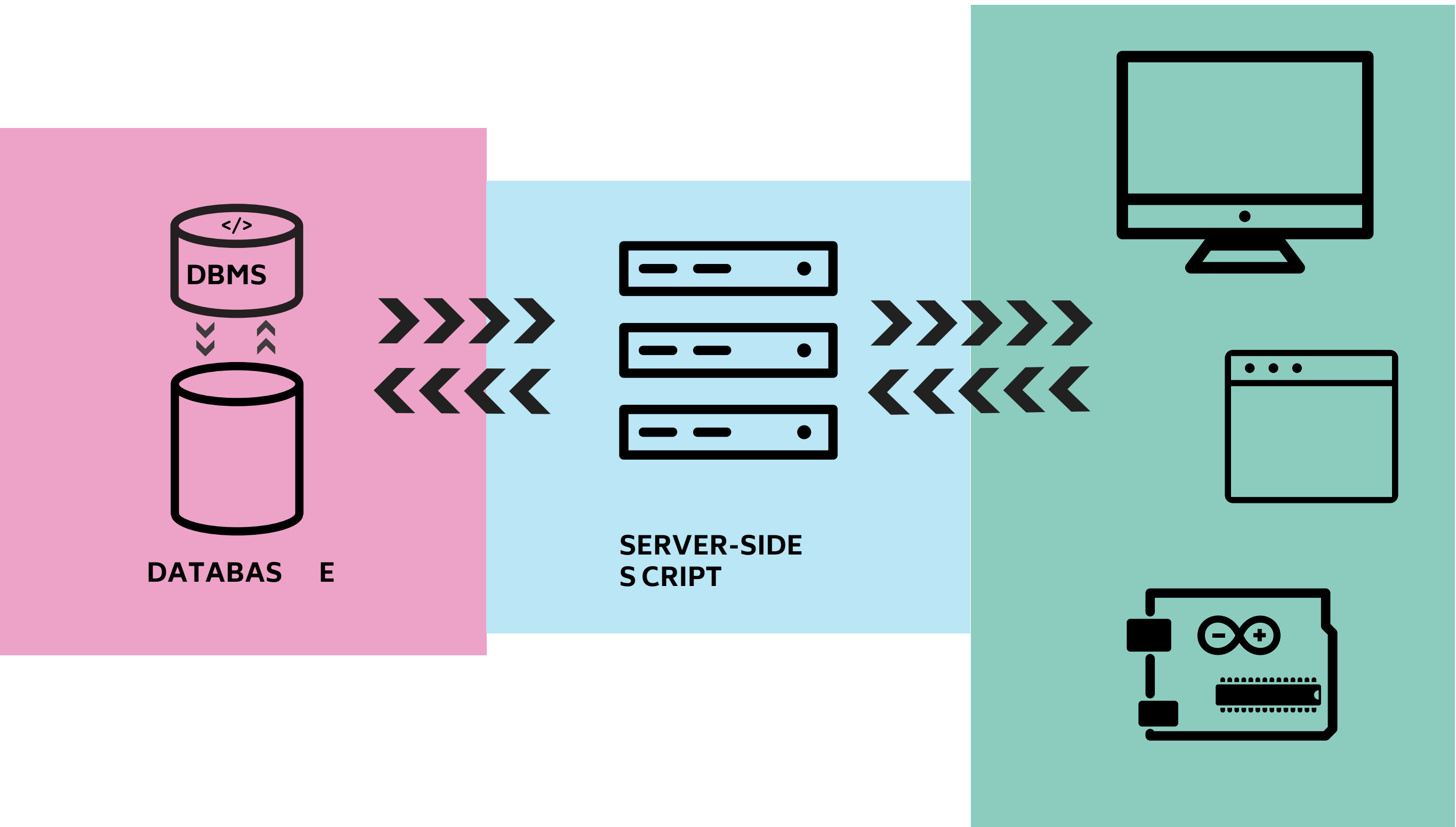


THREE TIER

DATA TIER

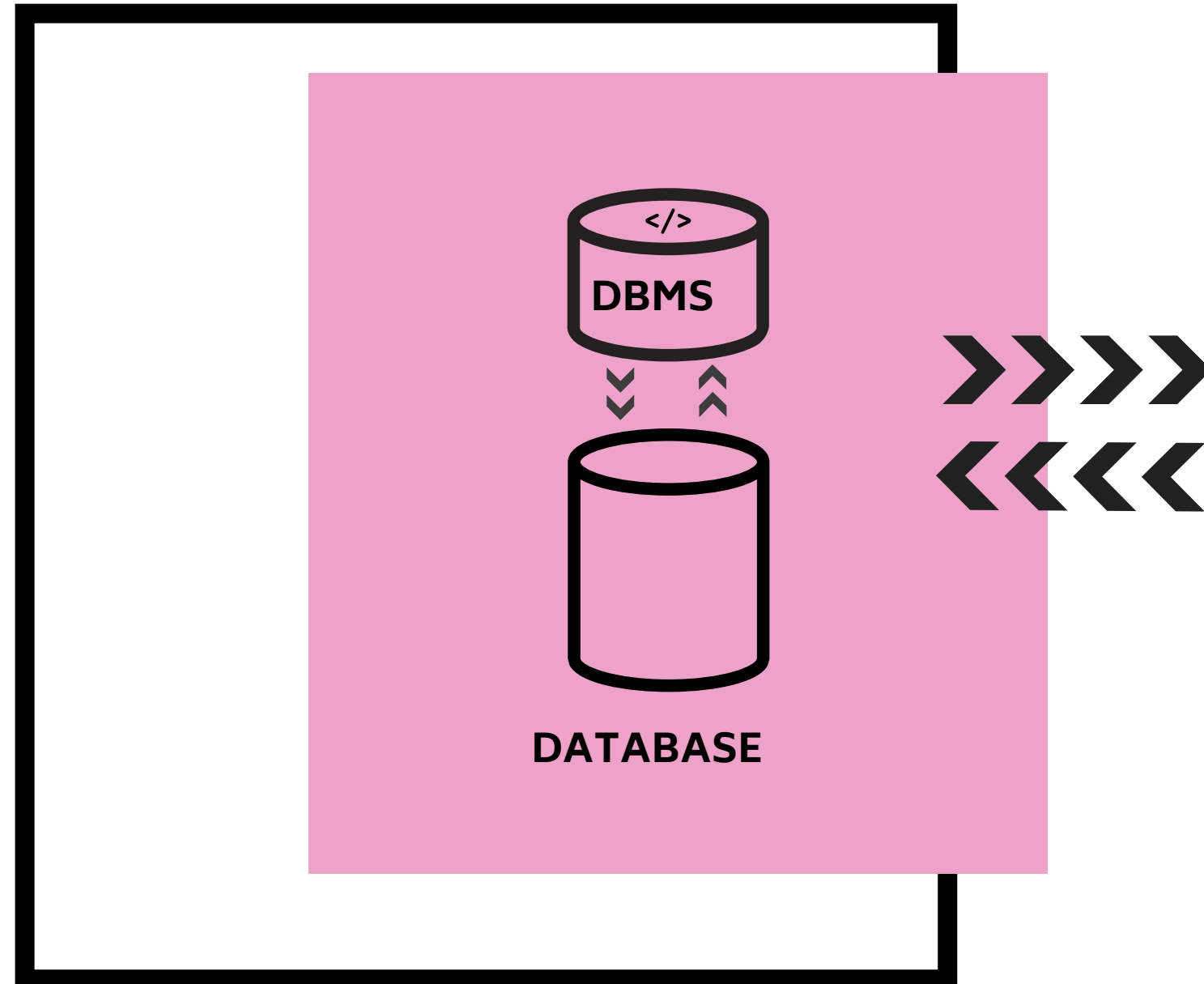
LOGIC TIER

CLIENT TIER



DATA TIER

USUALLY HOSTED ON A
SERVER

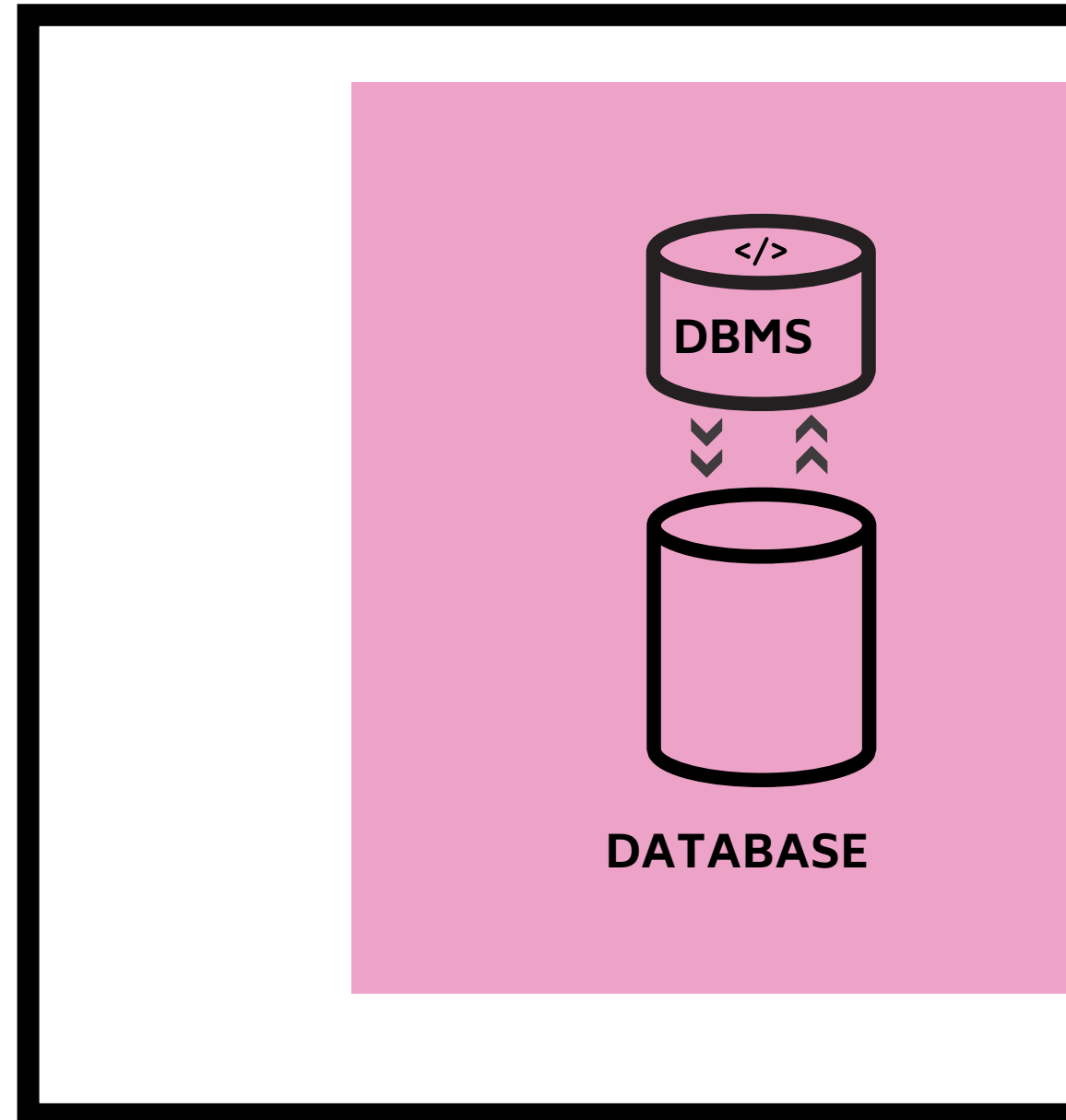


A DATABASE IS MADE OF
TWO MAIN COMPONENTS:

THE STRUCTURED
COLLECTION OF DATA
&
DATA BASE MANAGEMENT
SYSTEM (DBMS)

DATA TIER

USUALLY HOSTED ON A
SERVER



DATABASE MANAGEMENT
SYSTEMS ALLOW YOU TO
COMMUNICATE WITH THE
DATABASE, ORGANISE
DATA AND MANIPULATE IT.

DATABASE
MANAGEMENT
SYSTEM
SOFTWARE:

MYSQL
MONGODB
SQLITE
POSTGRESQL

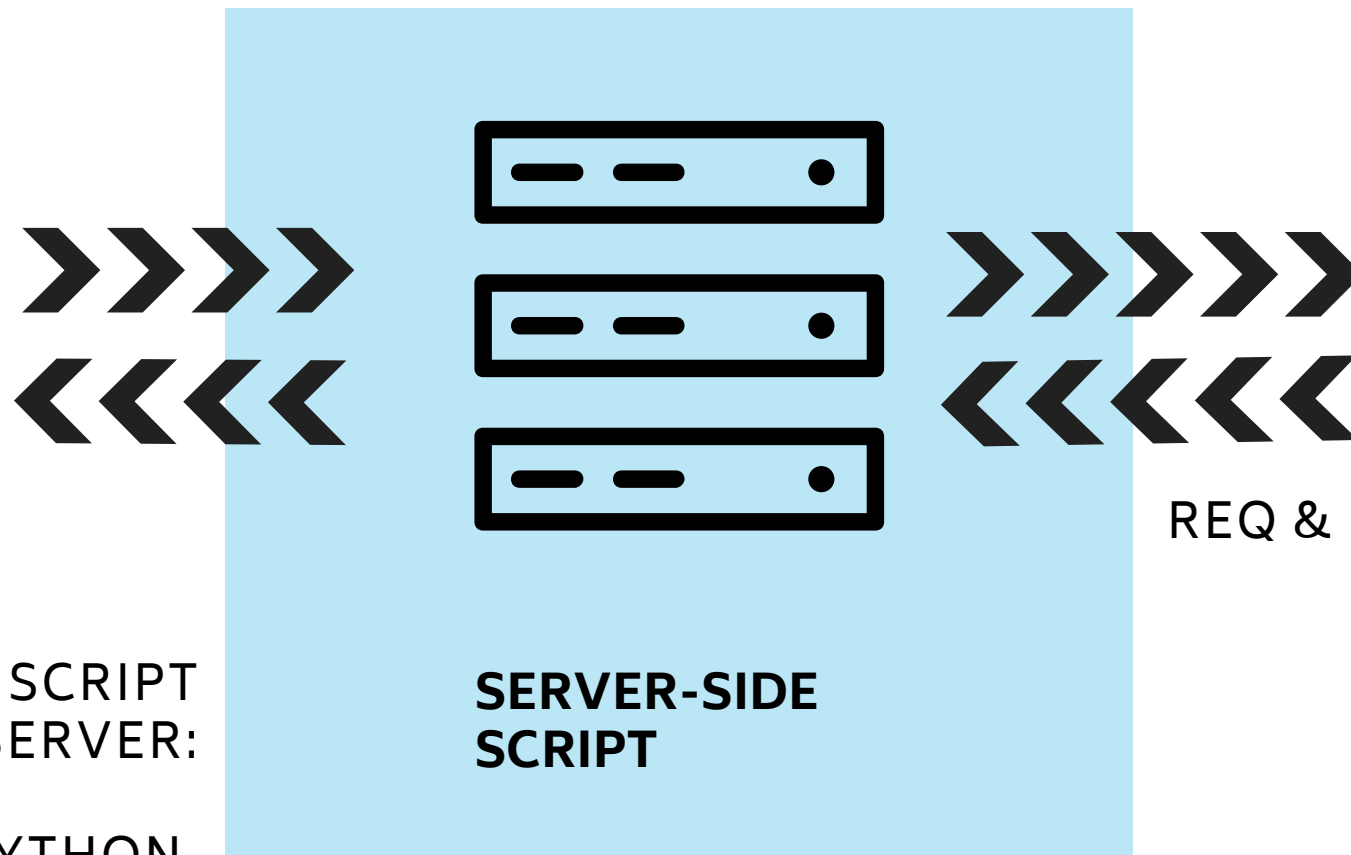
...

REQUESTS SENT TO
THE
DATABASE WILL USE
THE DBMS SYNTAX
TO RETRIEVE DATA.

I.E. WITH SQL BASED
DBMS THE SQL
SYNTAX WOULD BE
USED TO QUERY THE
DATABASE.

LOGIC TIER

ACTS AS INTERMEDIATE
BETWEEN CLIENT & DB
//
VALIDATES, PROCESSES &
CALCULATES DATA



SERVER-SIDE SCRIPT
RUNNING ON A SERVER:

PYTHON,
NODE,
RUBY ON RAILS,
PHP,

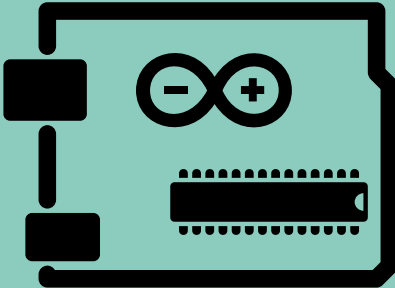
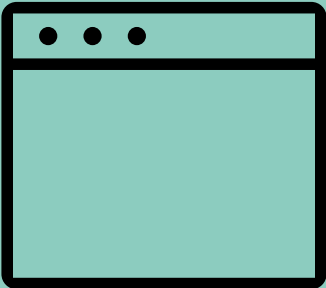
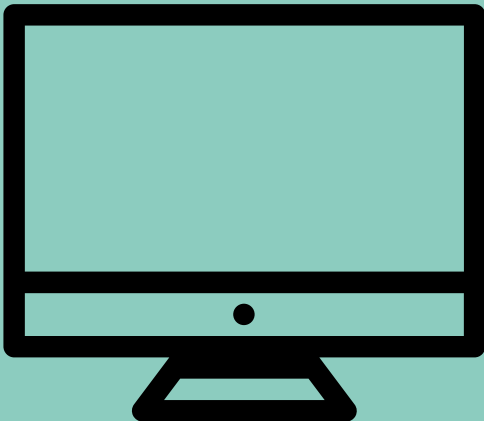
REQ & RES W/ THE CLIENT

SERVER-SIDE
SCRIPT

CLIENT TIER

THE CLIENT TIER IS THE USER
INTERFACE, THE RENDERING OF
INFORMATION.

- WEBSITE
- APP
- LIGHT INSTALLATION
- ARDUINO
- PROCESSING
- OPEN FRAMEWORKS
- A BUTTON
- ...

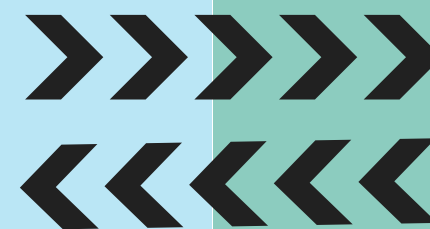
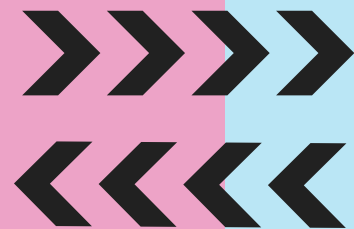
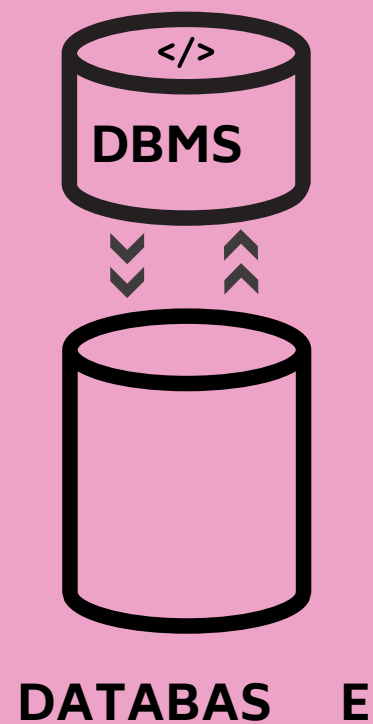


DATA TIER

LOGIC TIER

CLIENT TIER

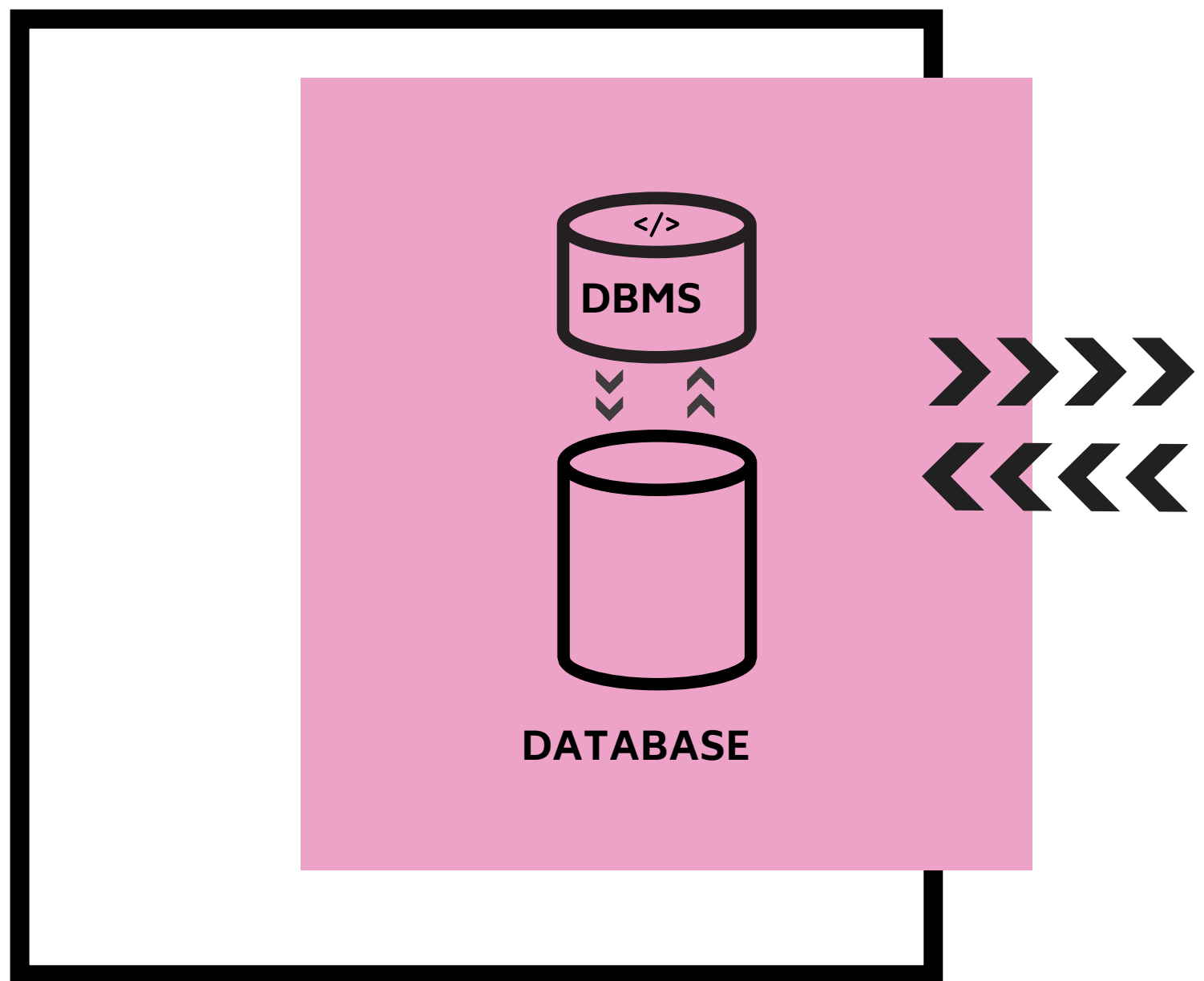
ARE BUILT + MAINTAINED AS SEPERATE
MODULES & CAN ALL EXIST IN DIFFERENT
LOCATIONS



COMMUNICATION BETWEEN TIERS

SOCKET, UDP, REST(HTTP), SOAP, ...

D A T A B A S E S



DESIGNING A DATABASE

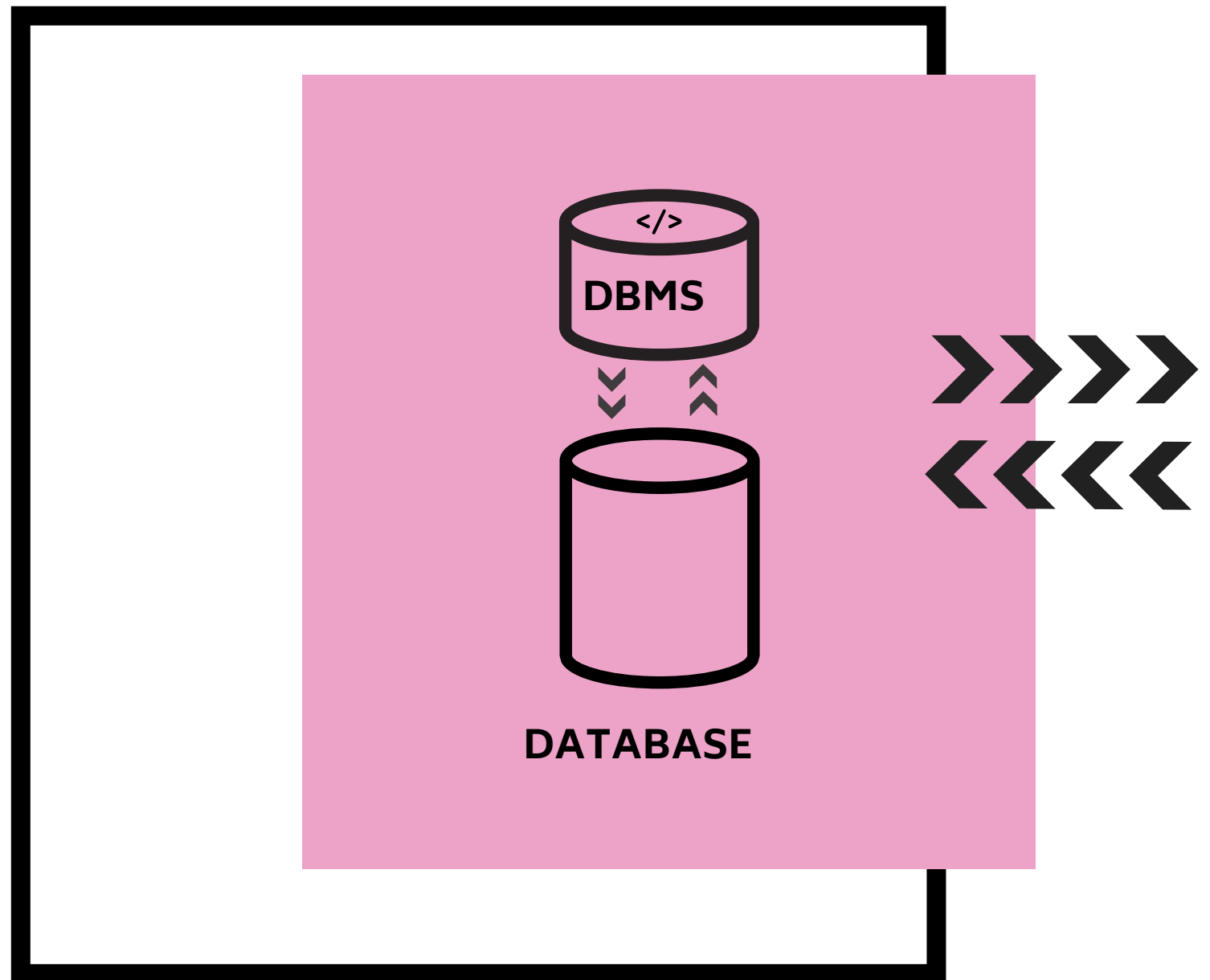
■ RELATIONAL DBMS ■

MAMP

APACHE = DATABASE SERVER

MYSQL = DATABASE
MANAGEMENT SYSTEM

PHP = SERVER-SIDE SCRIPTING
LANGUAGE



SEQUEL PRO

